

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently amended): A carbon fiber bundle comprising:
a plurality of single carbon fibers[[,]]; and
at least one sizing agent;
wherein
the plurality of single carbon fibers are sized with [[a]] the at least one sizing agent,
and
the at least one sizing agent comprises comprising:
a polymer having a main chain formed of carbon-carbon bonds, ~~containing~~
comprising an acid group in at least a part of side chains or at least a part of main chain ends,
and ~~representing~~ an acid value of the polymer is in the range from 23 to 120 mg KOH/g as
measured in accordance with ASTM D1386; or
a polymer having a main chain formed of carbon-carbon bonds, ~~and containing~~
comprising at least ~~either one~~ of an epoxy group ~~and or~~ an ester group in at least a part of side
chains or at least a part of main chain ends.

Claim 2 (Currently amended): The carbon fiber bundle according to claim 1, further
comprising a pre-size wherein the sizing was conducted after pre-sized with a obtained by
pre-sizing before a sizing treatment with a pre-sizing agent consisting of an epoxy resin.

Claim 3 (Currently amended): The carbon fiber bundle according to claim 2, wherein
the sizing treatment is obtained by sizing with at least one sizing agent which comprises at
least 35 wt% of an acid modified polypropylene resin (compound a1) having a weight

average molecular weight of 45,000 or less and an acid value of 23 to 120 mgKOH/g as measured in accordance with ASTM D1386.

Claim 4 (Currently amended): The carbon fiber bundle according to claim 3, wherein the at least one sizing agent further comprises at least 5 wt% of an olefin-based thermoplastic elastomer resin (compound b).

5 (Currently amended): The carbon fiber bundle according to claim 4, wherein ~~the compound b~~ has a Vicat softening point of the compound b is has 120°C or less as measured in accordance with ASTM D1525-70.

Claim 6 (Currently amended): The carbon fiber bundle according to ~~any of claims~~ claim 3 to 5, wherein the compound a1 has a weight average molecular weight of 20,000 or less, and an acid value of 40 to 75 mgKOH/g as measured in accordance with ASTM D1386.

Claim 7 (Currently amended): The carbon fiber bundle according to claim 2, wherein the sizing treatment is obtained by sizing with at least one sizing agent which comprises at least 40 wt% of a copolymer (compound c) obtained by copolymerizing ethylene or propylene and an epoxy-containing monomer.

Claim 8 (Currently amended): The carbon fiber bundle according to ~~any of claims~~ claim 2 to 7,
wherein
the single carbon fibers comprise a plurality of wrinkles on their surface, ~~wherein~~ and

a vertical difference between a highest portion and a lowest portion in a region defined by $2\text{ }\mu\text{m}$ of circumferential length \times $1\text{ }\mu\text{m}$ of fiber axial direction length of the single carbon fibers is 40 nm or more.

Claim 9 (Currently amended): The carbon fiber bundle according to ~~any of claims~~ claim 2 to 8,

wherein

the at least one sizing agent further comprises ~~no more than 5 wt%~~ of a silane coupling agent comprising a chemical group having in the silane coupling agent molecule selected from the group consisting of ~~any one of~~ an epoxy group, a vinyl group, an amino group, a methacrylic group, an acrylic group and a straight chain alkyl group ~~in its molecule~~ and

a wt% of the silane coupling agent is 5 wt% or less.

Claim 10 (Currently amended): The carbon fiber bundle according to ~~any of claims~~ claim 2 to 9, wherein

the carbon fiber bundle is cut to a prescribed length, wherein and

an amount of the sizing agent ~~deposited to the total~~ is 1 to 5 wt% of the total weight.

Claim 11 (Currently amended): The carbon fiber bundle according to claim 10, wherein

~~having~~ a mass per unit length of the carbon fiber bundle is 0.4 to 15 g/m, and

a width/thickness ratio is from ~~[[of]]~~ 3 to 10.

Claims 12-15 (Canceled).

Claim 16 (Currently amended): The carbon fiber bundle according to claim 1, wherein the single carbon fibers comprise a plurality of wrinkles on their surface, ~~wherein~~ and a vertical difference between a highest portion and a lowest portion in a region defined by $2\text{ }\mu\text{m}$ of circumferential length \times $1\text{ }\mu\text{m}$ of fiber axial direction length of the single fibers is 40 nm or more.

Claim 17 (Currently amended): The carbon fiber bundle according to claim 16, wherein the at least one sizing agent comprises:
at least 35 wt% of an acid modified polypropylene resin (compound a2) having a number average molecular weight of 45,000 or less and an acid value of 23 to 120 mgKOH/g as measured in accordance with ASTM D1386; and
at least 5 wt% of an olefin-based thermoplastic elastomer resin (compound b).

Claim 18 (Currently amended): The carbon fiber bundle according to claim 17, wherein ~~the compound b~~ has a Vicat softening point of the compound b is 120°C or less as measured in accordance with ASTM D1525-70.

Claim 19 (Currently amended): The carbon fiber bundle according to claim 16, wherein the at least one sizing agent comprises at least 40 wt% of a copolymer component ~~consisting of~~ comprising of at least one or both of:
a copolymer (compound c) obtained by copolymerizing ethylene or propylene and an epoxy-containing monomer; and

a copolymer (compound d) obtained by copolymerizing ethylene or propylene, an epoxy-containing monomer and an acrylic ester.

Claim 20 (Currently amended): The carbon fiber bundle according to claim 19, wherein the at least one sizing agent further comprises a copolymer (compound e) obtained by copolymerizing ethylene or propylene, an acrylic ester and a monomer containing an acid anhydride group.

Claim 21 (Currently amended): The carbon fiber bundle according to ~~any of claims~~ claim 16 to 20, wherein ~~cross-section of the single fiber have~~ a ratio of major axis to minor axis of a cross-section of the single fiber is from 1.03 to 1.20, and a Si content ~~of~~ is 500 ppm or less as measured by ICP emission spectrometry.

Claim 22 (Currently amended): The carbon fiber bundle according to ~~any of claims~~ claim 16 to 21, wherein

the at least one sizing agent further comprises ~~no more than 5 wt%~~ of a silane coupling agent comprising a chemical group having in the silane coupling agent molecule selected from the group consisting of ~~any one of~~ an epoxy group, a vinyl group, an amino group, a methacrylic group, an acrylic group and a straight chain alkyl group ~~in its molecule~~ and

a wt% of the silane coupling agent is 5 wt% or less.

Claim 23 (Currently amended): The carbon fiber bundle according to ~~any of claims~~
claim 16 to 22, wherein

the carbon fiber bundle is cut to a prescribed length, ~~wherein and~~
an amount of the sizing agent ~~deposited to the total~~ is 1 to 5 wt% of the total weight.

Claim 24 (Currently amended): The carbon fiber bundle according to claim 23,
wherein

~~having~~ a mass per unit length of the carbon fiber bundle is 0.4 to 15 g/m, and
a width/thickness ratio is from ~~[[of]]~~ 3 to 10.

Claims 25-28 (Canceled).